

## CLIMATOLOGICAL DATA FOR NOVEMBER, 1912.

## DISTRICT NO. 10, GREAT BASIN.

ALFRED H. THIESSEN, District Editor.

## GENERAL SUMMARY.

No unusual meteorological features occurred in the Great Basin during November, 1912, the month being nearly average in all respects. It was favorable for farm work, but owing to the muddy condition of the soil a small acreage of sugar beets in Utah still remained in the ground. Fall plowing was prosecuted vigorously in all dry-farming sections, and in many places fall sowing of grain was done. Range grass was reported in good condition, and stock had not suffered from inclement weather or lack of food or water.

The temperature for November averaged somewhat above normal, being in marked contrast to the two previous fall months, which were colder than normal. This month was also much warmer than November of last year, which, it will be remembered, was one of the coldest on record.

The temperatures throughout the month were unusually uniform, there being no very cold or very warm spells. The cooler portions of the month were from the 1st to the 9th and from the 20th to the 27th. The warmest portion of the month extended from the 7th to the 11th.

Precipitation for the district averaged slightly below normal. The rainfall of October was much above normal; while that of September was about normal. During November the precipitation occurred for the most part during the first half of the month, due to a succession of storms which passed over the Northwest during that period in rapid succession. Other rainy dates were the 19th, 20th, and 30th.

The average number of rainy days was 4, clear days 16, partly cloudy days 7, and cloudy days 7.

## TEMPERATURE.

The mean temperature for the Great Basin was 38.5°, which is 1.1° above normal. There was a very general excess of temperature in the Oregon and Nevada areas; while in the Utah, Idaho, and Wyoming areas, there was less uniformity of the local mean temperatures in reference to the normals. The greatest positive departure was 7.9° at Carson Dam, Nev.; while the greatest negative departure was 2.2° at Thistle, Utah. The local mean temperatures ranged from 49.3° at Jean, Nev., to 29.0° at Cokeville, Wyo.

The following were the highest temperatures that occurred in the various areas of the several States of this district: 60° at Border, Wyo., on the 9th; 63° at Weston, Idaho, on the 9th; 75° at Fillmore, Utah, on the 9th; 66° at Silver Lake, Oreg., on the 13th; 62° at Tahoe, Cal., on the 25th; and 75° at Jean, Nev., on the 1st.

The lowest temperatures were: 2° at Cokeville, Wyo., on the 27th; 15° at Weston, Idaho, on the 29th; 4° at

Meadowville, Utah, on the 1st; 5° at Cliff, Oreg., on the 24th; 10° at Truckee, Cal., on the 21st; and 3° at Tecoma, Nev., on the 23d.

Precipitation averaged only 0.89 inch, which is 0.15 inch below normal. The largest amounts fell in the Utah, Idaho, Wyoming, and Oregon areas; while the lesser amounts occurred in Nevada. While the general average was below normal, there were some exceptions as in the extreme northern portion of the Utah area and in the Idaho area, where most stations reported monthly amounts above normal. The largest local monthly amount, 3.55 inches, fell at Clarkston, Utah. Almost equally large amounts fell at Tahoe, Cal., and Lewers Ranch, Nev., but these were below normal, while that at Clarkston was probably more than double the normal amount at that station.

In the Utah area snow was quite general in all regions, though on the desert districts of the middle and northern portion of this area the snowfall was unimportant. In the mountains of the central and northern counties, snow fell to a depth of 3 feet in the passes.

In the California and Nevada areas light snow fell at the 5,000-foot level, but larger amounts were reported at greater elevations, being about 8 inches at 6,000 feet and as much as 20 inches at 8,000 feet. The heaviest snowfall reported was 27.5 inches at Deer Park, Cal., at an elevation of 6,500 feet. Considerably more snow was reported at high levels during September, October, and November, 1912, than during the same months of either 1910 or 1911.

The average snowfall for stations in the Carson, Humboldt, Truckee, and Walker drainage basins, for the three months, September, October, and November, for the years 1910, 1911, and 1912, are shown in the following table. Three stations were used for the Carson, three for the Humboldt, eight for the Truckee, and three for the Walker Basin. No more stations with complete records are available for the purpose.

Drainage basin.	Average amounts of snowfall, in inches and tenths, for the 3 months, September, October, and November, for the years—		
	1910	1911	1912
Carson.....	0.0	6.2	8.0
Humboldt.....	2.6	8.0	13.1
Truckee.....	11.3	13.0	18.2
Walker.....	5.0	8.7	9.7

This table shows that considerably more snow occurred during September, October, and November, 1912, than during the same months of the two preceding years. It seems to be the generally accepted opinion that there is not

as much run-off from an early snow as from a late one, but in spite of this fact the early heavy snows this season will help out last year's deficiency in these watersheds to a great extent. It will require heavy snow later in the season to bring Lake Tahoe up to the desired level.

#### DAILY RANGES OF TEMPERATURE IN NEVADA.

By HARVEY S. COLE, Section Director.

In the Climatology of the United States, Prof. Henry says that the mean daily range of temperature is greatest in the Plateau region and least along the Pacific and Gulf coasts. Nevada, due to its geographic position, is an extreme type of country having a large range of temperature. It is situated east of a high mountain range and in addition has a considerable elevation. These facts account for the relatively high afternoon temperatures, and at the same time the rare and clear air permit rapid radiation at night with accompanying low temperatures.

The following instances of great ranges in temperature will emphasize this fact. A daily range of temperature of  $75^{\circ}$  occurred at Carlin August 24, 1910, and  $72^{\circ}$  on July 6 of the same year was reported at the same place. There is scarcely a season that a daily range of over  $60^{\circ}$  is not reported at that station. Quinn River Ranch scarcely ever fails to report a range of  $55^{\circ}$  or more during a season and has reported  $60^{\circ}$  on several different occasions. Ranges of  $50^{\circ}$  or more are expected over the eastern and northern portions of the State. The highest temperature ever recorded in the State is  $120^{\circ}$  at Cobre, in August, 1893; the lowest  $-39^{\circ}$  at Beowawe, January 8, 1890; an absolute range of  $159^{\circ}$  for the State.

For this study the mean daily ranges for the different months of the year were charted for 20 stations. The stations were not as well distributed as could be desired, as in some portions of the State no record for a number of years is available, but it is thought the ones chosen will answer very well. A chart of the average daily ranges for the year was also prepared.

The mean daily ranges for charts were obtained by subtracting the mean maximum temperature from the mean minimum temperature for each month in the year. The mean maximum and minimum temperatures used were for the different periods obtainable, varying in length, but none for less than five years.

These daily ranges were charted and lines drawn for each  $5^{\circ}$ . The lines are so irregular that the exposures of the instruments are evidently not uniform; but there is a general increase in range from Tonopah outward, the increase being decided to the northwest and to the northeast, east, southeast, and south, but small to the north and west.

The three Weather Bureau stations, Reno, Winnemucca, and Tonopah, show decidedly lower ranges than surrounding stations, the annual ranges being  $28^{\circ}$ ,  $28^{\circ}$ , and  $19^{\circ}$ , respectively. This, of course, is because of the elevation of the instruments above the ground, in free air, where the effects of radiation and insulation are not so great as at the surface.

The record at Austin shows an average daily range for the year of  $23^{\circ}$ , much less than at surrounding stations, because the location is in a long narrow valley trending

north and south, between high mountain ranges which cut off the amount of sunshine both morning and evening. Its elevation is 6,594 feet, which, other things equal, would give it a larger range.

Records at Lovelocks and Quinn River Ranch show a range of  $34^{\circ}$  each, considerably larger than the stations in the western portion of the State, which average  $28^{\circ}$ . The elevation at Lovelocks is 3,977 feet and at Quinn River Ranch it is 4,850 feet, somewhat lower than the other stations in the western portion. This increase in range is due to the great radiation over the Black Rock Desert, the air over the desert being so clear and dry that insolation and radiation are very effective.

The greatest average daily ranges for the year in the State are at Carlin and Geyser, which are  $42^{\circ}$  and  $40^{\circ}$ , respectively. Both stations are in the eastern portion of the State. Carlin has an elevation of 5,232 feet and Geyser 6,055 feet. The instruments at both stations are in shelters, over uncultivated ground, in a broad valley, the surface sloping gently to the southward. They are also in a portion of the State where the number of clear days is unusually large, allowing a great amount of insolation and radiation.

The annual variation of the daily range over the State is very noticeable, the average for February at Tonopah being  $11^{\circ}$  and increasing rapidly in each direction except to the north and west. In the northwestern and eastern portions of the State the midwinter average is  $25^{\circ}$  to  $33^{\circ}$ , the latter occurring at Geyser. These ranges increase gradually from midwinter to midsummer, when they exceed  $40^{\circ}$  in the northwestern portion and in the eastern half of the State. They exceed  $44^{\circ}$  at several stations in August, and reach  $57^{\circ}$  at Carlin. The large range at Carlin is due to the shelter being over uncultivated ground, the gentle slope to the south, the elevation leaving the denser portion of the air below, and to its location east of the Sierra, resulting in dry air and cloudless skies.

By the courtesy of Profs. Church and Ferguson I have obtained average daily ranges on Mount Rose for the midsummer and midwinter months, which are  $9^{\circ}$  and  $22^{\circ}$ , respectively. The station is on the highest point of the mountain, at an elevation of 10,800 feet. The midwinter range at Lewers Ranch, about 6 miles distant from Mount Rose and at an elevation of 5,200 feet, is  $21^{\circ}$ , and the midsummer range is  $36^{\circ}$ . The difference in range is accounted for by the fact that Mount Rose is a sharp peak projecting into the air, and the temperature readings are as near free-air readings as can be obtained except by kite observations.

The range retreats from midsummer to midwinter as consistently as it advanced. It is interesting to notice how consistently the lines of greater range appear on the outer edges of the State, and the lines of least range disappear at Tonopah as the season advances, month by month, from February to August, and how consistently the lines of least range appear at Tonopah and the lines of greatest range disappear on the outer edge from August to February.

The least difference between midsummer and midwinter ranges is  $7^{\circ}$  at Fernly and  $28^{\circ}$  at Carlin. This difference between summer and winter ranges is comparatively small in the western and southern portions of the State, while it is large in the northern portions.

TABLE 1.—Climatological data for November, 1912. District No. 10, Great Basin.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of cloudy days.
Wyoming.																				
Border.....	Uinta.....	6,085	10	30.0	+0.8	60	9	3	27	36	0.07	-0.83	0.04	0.5	2	17	6	7	w.	S. W. Condron.
Cokeville.....	do.....	6,204	2	29.0	+53	8	8	2	27	38	0.67	0.19	0.19	8.0	6	23	1	5	nw.	E. J. Tuckett.
Evanston.....	do.....	6,860	16	32.2	+0.3	59	9	8	1	34	0.74	-0.13	0.21	4.0	6	20	5	5	sw.	Frank Tucker.
Idaho.																				
Geneva.....	Bear Lake.....	6,171	4								1.35		0.71	8.2	5	22	6	2		F. W. Boehme.
Grace.....	Bannock.....	5,400	5																	G. K. Miller.
Paris.....	Bear Lake.....	5,946	17																	John Norton.
Weston.....	Oneida.....	4,460	14	36.6	+0.2	63	9	15	27	34	1.85	+0.45	0.45	0	9	17	5	8	n.	Wm. T. Chatterton.
Utah.																				
Alpine.....	Utah.....	4,900	13								0.96	-0.58	0.30		5	17	6	7		T. F. Carlisle.
Beaver.....	Beaver.....	6,000	8	33.8		66	78	6	30	50	0.57		0.26	T.	3	14	12	4	nw.	M. J. Shelton.
Black Rock.....	Millard.....	4,872	8	38.5		68	9	12	29	46	0.26		0.14		2	17	10	3		W. D. Livingston.
Burrville.....	Sevier.....	6,800	1	35.1		67	9	10	22	43	1.45		0.85		4					F. R. Curtis.
Castle Rock.....	Summit.....	6,244	7								0.98		0.20	7.5	3	14	7	9		David Moore.
Cedar City.....	Iron.....	5,750	7	43.8		66	79	18	21	38	0.73		0.38		3	24	3	3		Parley Dalley.
Center.....	Tooele.....	4,250	7	35.6		63	78	10	28	38	0.59		0.50	5.0	3	20	2	8	s.	L. C. Peterson.
Clarkston.....	CACHE.....	5,930									3.55		0.70		1	12	7	11		W. J. Griffiths.
Corinne.....	Boxelder.....	4,240	42	38.0	+0.6	66	11	17	30	32	1.45	+0.41	1.15	0.5	3	11	8	11		A. C. Murphy.
Deseret.....	Millard.....	4,541	17																	S. W. Western.
Elberta.....	Utah.....	4,650	10	39.2		69	9	18	27	31	0.65		0.26		4	19	3	8	s.	D. C. Walkey.
Enterprise.....	Washington.....	5,750	6																	John Day.
Erekson.....	Tooele.....	4,850									0.75		0.31	6.5	5					N. W. Erickson.
Farmington.....	Davis.....	4,267	11	39.8	-0.8	64	9	20	26	35	1.30	-0.32	0.60	2.0	4	23	3	4	n.	Charles Boylin.
Fillmore.....	Millard.....	5,100	20	41.9	-0.2	75	9	20	21	38	1.40	+0.40	0.63		5	5				J. J. Starley.
Garland.....	Boxelder.....			36.6		54	17	18	30	28	1.95		0.52	3.0	2	8	15	7	s.	Heber C. Cutler.
Garrison.....	Millard.....	4,850	9	42.3		70	4	12	27	50	0.37		0.27		2	2				E. M. Smith.
Government Creek.....	Tooele.....	5,277	11	38.6	-0.4	64	9	15	21	38	0.88	-0.29	0.26	4.5	4	14	6	10	s.	Walter James.
Granger.....	Salt Lake.....	4,560		40.8		68	9	23	26	28	1.00		0.50		2					Geo. E. Greene.
Grantsville.....	Tooele.....	4,220	1								0.80		0.45	1.5	3	14	7	9	sw.	J. C. Woodmansee.
Grouse Creek.....	Boxelder.....	5,148	4										0.35	5.0	6	18	5	7	s.	Phillip Paskett.
Heber.....	Wasatch.....	5,593	19	35.9	+0.6	65	9	10	27	40	1.00	-0.36	0.35	5.0	7	18	4	8	nw.	John Crook.
Henefer.....	Summit.....	5,301	12	36.0	+0.6	67	9	9	27	46	1.00	-0.70	0.25	1.5	7	18	4	8	nw.	William Brewer.
Hooper.....	Weber.....	4,436	1								0.30		0.20		2					T. M. Jones jr.
Ibapah (near).....	Tooele.....	7,500	8																	J. S. Lawton.
Ibex.....	Millard.....	5,250	1																	John J. Watson.
Josepa.....	Tooele.....	4,356	1	39.9		70	10	17	27	36	0.80		0.30		3	12	11	7	n.	Geo. K. Hubbell.
Joy.....	Juab.....	5,000																		A. M. Laird.
Junction.....	Piute.....	6,000									0.45		0.27		2	22	6	2	s.	Joseph Jensen.
Kanosh.....	Millard.....	5,250	2								1.53		0.70		4					Geo. Crane.
Kelton.....	Boxelder.....	4,230	32	33.3	-1.1	55	9	7	27	35	0.57	+0.20	0.40		2	5	19	6	sw.	F. W. Klock.
Lemay.....	do.....	4,221	1	39.4		52	79	28	29	17	0.30		0.30		1	21	5	4		Agent S. P. Co.
Levan.....	Juab.....	5,010	22	36.8	-0.2	65	9	16	1	32	1.44	+0.48	0.75	3.1	6	20	2	8	sw.	William Brown.
Logan.....	CACHE.....	4,507	21	37.7	-0.2	65	9	22	26	23	2.40	+1.17	0.64		8					Utah Exp. Station.
Low.....	Tooele.....	4,902		42.0		70	79	22	26	35	0.60		0.00		0	16	9	5		Agent W. P. Ry. Co.
Lucin.....	Boxelder.....	4,504	5																	C. C. Herrington.
Lund.....	Iron.....	5,086	3																	Job F. Hall.
Manti.....	Sanpete.....	5,575	17	38.6	+1.3	69	9	18	26	39	0.94	-0.02	0.31		6	16	2	12		J. M. Anderson.
Maple Creek.....	Utah.....	4,850									1.69		0.81		5	19	2	9		Lewis W. Gilliam.
Marion.....	Summit.....	6,400	7								1.27		0.33	6.0	9	13	9	8	nw.	Jas. Woolstenhulme.
Marysville.....	Piute.....	6,076	12	37.2	0.0	69	71	11	26	54	0.48	-0.44	0.30	0.8	2	13	8	9	n.	John W. Henry.
Meadowville.....	Rich.....	6,200	11	33.2	-0.6	63	9	4	1	29	0.85	-0.45	0.40	1.0	4	19	1	10	w.	J. S. Moffat.
Midlake.....	Boxelder.....	4,235	1	42.4		56	10	33	30	12	T.		T.		0	18	6	6	e.	Agent S. P. Co.
Midvale.....	Salt Lake.....	4,365		40.4		70	9	20	25	31	1.28		0.31		7	14	7	9	s.	M. J. Joy.
Midford.....	Beaver.....	4,962	4								0.53		0.29		3					Agent Salt Lake Route.
Mills.....	Juab.....										2.55	+1.20	0.48		8	10	17	3	n.	Geo. McCune.
Millville.....	CACHE.....	4,848	17								0.38		0.12		5	18	9	3	sw.	Fred Yeates.
Minersville.....	Beaver.....	5,070	8								0.29	-0.31	0.28		3	25	2	3	w.	Geo. Roberts, sr.
Modena.....	Iron.....	5,479	11	38.3	-0.7	70	8	13	27	40	0.29		0.56	2.0	6					U. S. Weather Bureau.
Morgan.....	Morgan.....	5,068	7	38.1		66	9	18	21	33	0.98		0.46	0.5	7	18	4	8		E. C. Kingston.
Moroni.....	Sanpete.....	5,519	4	38.6		66	9	18	21	33	0.98		0.46	0.5	7	18	4	8		B. F. Eliason.
Mosida.....	Utah.....	4,510																		R. F. Curtis.
Nephi (near).....	Juab.....	5,119	7								0.52		0.37		2					S. Boswell.
Newcastle.....	Iron.....	5,150	1																	T. W. Jones.
Oak City.....	Millard.....	4,900	5								0.91	-0.23	0.26	2.0	6	19	2	9	s.	Peter Nielson.
Ogden.....	Weber.....	4,310	41	39.7	+0.3	67	8	16	30	30	0.22		0.12		3	18	41	47		A. Van DeGraff.
Panguitch.....	Garfield.....	6,500		34.7		64	9	9	23	49	0.17		0.09	1.7	3	8	17	5		John N. Henrie.
Park City.....	Summit.....	7,500	7	36.2		69	16	5	22	57	0.17		0.10	2.5	3	12	11	7	nw.	Gertrude Evans.
Park Valley.....	Boxelder.....	5,200	1								0.24		0.10		4					A. O. Evans.
Parowan.....	Iron.....	5,970	21	40.8	+1.8	68	10	18	30	40	1.12	+0.43	0.50		4					Alex. Matheson.
Payson.....	Utah.....	4,637	8								1.42		0.60		4	18	7	5	ne.	D. L. Coombs.
Pelican Point.....	do.....	4,600	1																	B. M. Mendenhall.
Pine Cliff Ranch.....	Summit.....	8,250																		L. E. Leavitt.
Pinto.....	Washington.....	5,907	14	38.7	+2.3	63	10	19	17	36	0.73	-0.59	0.52		3	20	1	6	n.	J. H. Harrison.
Plentiful.....	Tooele.....	4,220									0.51		0.22		3					C. L. Drumm.
Promontory.....	Boxelder.....	4,913	33								0.40		0.40							

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Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of overcast days.
Oregon.																				
Burns.....	Harney.....	4,157	21	36.3	+ 1.9	60	12	14	30	38	1.66	+ 0.7	0.85	1.2	10	10	13	7	.....	J. C. Welcome, jr.
Cliff.....	Lake.....	4,300	5	36.4	.....	57	12†	5	24†	49	0.96	.....	0.30	0	6	9	6	15	nw.	John C. Green.
Paisley.....	do.....	4,500	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. C. Woodward.
Silver Lake.....	do.....	4,700	15	39.1	+ 2.3	66	13	9	24	48	0.88	- 0.12	0.50	0	4	16	11	3	n.	G. W. Marvin.
California.																				
Tahoe.....	Placer.....	6,240	2	37.0	.....	62	25	15	19	33	3.11	.....	1.00	11.0	5	13	1	16	w.	R. M. Watson.
Truckee.....	Nevada.....	5,819	41	38.8	+ 2.3	58	28	10	21	37	1.20	- 1.16	0.60	8.0	3	12	11	7	se.	Southern Pacific Co.
Nevada.																				
Austin.....	Lander.....	6,594	23	40.9	+ 2.2	64	24	20	1†	30	0.40	- 0.28	0.20	4.0	4	19	1	10	se	F. O. Booe.
Battle Mountain.....	do.....	4,843	41	42.3	+ 3.6	70	1†	10	25†	50	0.06	- 0.50	0.04	0.2	3	20	0	10	.....	Southern Pacific Co.
Beowawe.....	Eureka.....	4,905	41	40.0†	+ 3.1	68*	10	13	29	41*	0.31	- 0.32	0.21	.....	2	6	19	5	se.	Do.
Carlin.....	Elko.....	5,232	41	41.4	+ 7.9	74	19	5	30	58	0.93	+ 0.41	0.35	T.	6	20	5	5	.....	Do.
Carson Dam.....	Churchill.....	4,032	5	40.5†	.....	70†	9	15	21	47†	0.00	.....	0.00	0	0	0	0	0	w.	U. S. Reclamation Service.
Cherry Creek.....	White Pine.....	6,450	4	38.0	.....	61	9	16	21	34	0.40	.....	0.24	3.8	3	13	15	2	w.	J. H. Leishman.
Clover Valley.....	Elko.....	6,000	11	38.4	+ 1.9	61	9	15	1	38	1.74	- 0.08	1.16	0	6	20	3	7	.....	I. F. Wiseman.
Columbia.....	Esmeralda.....	5,750	5	40.6	.....	64	9	21	21	35	0.42	.....	0.38	3.0	2	24	4	2	se.	A. Booth.
Dry Farm.....	Elko.....	5,600	0	39.0	.....	61	10	19	1†	36	1.02	.....	0.46	.....	4	.....	.....	.....	.....	Walfrid Sohlman.
Elko.....	do.....	5,432	41	37.0	+ 3.2	62	9	10	29	43	0.89	+ 0.22	0.65	T.	9	24	0	6	w.	E. J. Clark.
Eureka.....	Eureka.....	6,500	9	38.6	.....	60	9	14	21	37	0.87	.....	0.50	13.5	3	16	6	8	s.	Clay Simms.
Fallon.....	Churchill.....	3,965	7	40.6	.....	72	9	13	21	44	0.08	.....	0.03	0	3	18	6	6	n.	U. S. Experiment Station.
Fernley.....	Lyon.....	4,200	39	40.6	+ 1.1	71	8	10	25	50	0.00	- 0.34	0.00	0	0	18	9	3	.....	Mrs. G. A. Steele.
Gardnerville.....	Douglas.....	4,830	12	40.6	- 2.1	69	8	14	22†	46	0.13	- 1.61	0.07	0	3	.....	.....	.....	.....	Forest Service.
Gerlach.....	Washoe.....	3,931	0	.....	.....	72	25	.....	.....	.....	0.43	.....	0.25	0	2	14	0	16	ne.	Western Pacific Co.
Geyser.....	Lincoln.....	6,055	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mrs. J. F. Wambolt.
Glenbrook.....	Douglas.....	6,240	3	39.7	.....	58	1†	21	13	34	2.30	.....	1.05	5.0	4	21	5	9	sw.	C. C. Henningsen.
Golconda.....	Humboldt.....	4,697	33	40.5	0.0	66	9	14	24†	39	0.39	- 0.00	0.39	0	1	10	12	8	w.	Southern Pacific Co.
Halleck.....	Elko.....	5,631	19	36.0	+ 3.4	65	9	12	29†	40	T.	- 0.52	T.	0	0	14	6	10	sw.	Do.
Hawthorne.....	Mineral.....	4,569	18	44.4	+ 0.1	72	9	20	27	37	0.13	- 0.19	0.09	0	2	21	7	2	sw.	G. B. Stannard.
Jean.....	Clark.....	2,074	4	49.3	.....	75	1	20	17	47	0.00	.....	0.00	0	0	21	9	0	nw.	Salt Lake Route.
Lahontan.....	Churchill.....	4,200	0	43.1	.....	72	8	17	30	31	0.01	.....	0.01	0	1	16	9	5	w.	U. S. Reclamation Service.
Lewers Ranch.....	Washoe.....	5,500	24	42.7	- 0.9	69	17	18	21	42	3.10	- 0.08	2.10	2.0	4	11	13	6	.....	Ross Lewers.
Lida.....	Esmeralda.....	6,037	0	40.2	.....	67	28	23	1	41	0.35	.....	0.35	2.5	1	27	1	2	se.	L. F. Detwiler.
Lovelocks.....	Humboldt.....	3,977	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. P. Tilford.
McDermitt.....	do.....	4,700	23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Scott Sterling.
McGill.....	White Pine.....	6,338	21	35.6	+ 1.5	62	8†	10	1†	47	0.57	- 0.26	0.39	.....	4	21	3	6	s.	R. E. Middagh.
Millett.....	Nye.....	6,002	4	36.1	.....	67	9	6	23	51	0.20	.....	0.20	.....	1	20	5	5	w.	Fred J. Jones.
Mina.....	Mineral.....	4,600	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Southern Pacific Co.
Oasis Ranch.....	Esmeralda.....	5,106	0	.....	.....	.....	.....	13 <sup>a</sup>	23	.....	0.00	.....	0.00	0	0	27	2	1	s.	A. S. Patterson.
Potts.....	Nye.....	6,990	19	34.2	- 0.6	56	8	10	1†	39	0.22	- 0.23	0.12	4.0	2	12	5	13	s.	Miss Mamie Potts.
Quinn River Ranch.....	Humboldt.....	4,850	10	37.0	.....	66	9	9	24	46	0.70	+ 0.19	0.55	0	2	17	2	11	w.	F. M. Payne.
Rebel Creek.....	do.....	.....	0	.....	.....	.....	.....	.....	.....	.....	0.91	.....	0.70	T.	4	14	8	8	sw.	E. J. Hyatt.
Reno.....	Washoe.....	4,532	41	42.4	+ 1.4	65	8	20	25	39	0.10	- 0.99	0.08	T.	3	16	7	7	w.	U. S. Weather Bureau.
Soda Lake.....	Churchill.....	4,534	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	U. S. Reclamation Service.
Tecoma.....	Elko.....	4,812	34	38.3	+ 4.3	69	5	3	23	60	0.54	+ 0.14	0.30	.....	4	14	6	10	.....	Southern Pacific Co.
Tonopah.....	Nye.....	6,090	7	42.5	.....	62	9	23	21	25	0.10	.....	0.10	1.0	1	19	8	3	se.	U. S. Weather Bureau.
Wells.....	Elko.....	5,631	40	36.4	.....	65	6	15	15†	42	0.43	- 0.01	0.36	0	2	24	1	5	.....	Southern Pacific Co.
Winnemucca.....	Humboldt.....	4,432	33	39.6	+ 2.1	66	9	15	24	40	0.92	+ 0.18	0.71	0.3	5	12	6	12	ne.	U. S. Weather Bureau.

a, b, c, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.

\*\* Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.

† Also on other dates.

T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—Daily precipitation for November, 1912. District No. 10, Great Basin.

Stations.	Watershed.	Day of month.																														Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Wyoming.																																
Border.....	Bear.....				.03						T.																				.04	0.07
Cokeville.....	do.....			.19	.13		.06			.09											.16										.04	0.67
Evanston.....	do.....				.06		T.				.21	.18				.15					.09										.05	0.74
Idaho.																																
Geneva.....	Bear.....		.27	.71			.11				.14																				.12	1.35
Grace.....	do.....																															
Paris.....	do.....																															
Weston.....	do.....			.10	.17		.35	.07			.45	.41				.10					.15										.05	1.85
Utah.																																
Alpine.....	G. S. Lake.....			.30	.11						.30										.15									.10	0.96	
Beaver.....	Sevier Lake.....		T.		.13						.18									T.										.26	0.57	
Black Rock.....	do.....				.12	.14																								T.	0.26	
Burrville.....	do.....			.34																											.85	1.45
Castle Rock.....	G. S. Lake.....		.03		.10	.04	.18				.20	.15				.08					.01									.15	0.98	
Cedar City.....	Desert.....											.38									.22									.13	0.73	
Center.....	do.....			T.	.07		T.					T.									.02									.50	0.59	
Clarkston.....	G. S. Lake.....		.50	.70			.40	.65		.40	.50							.40														
Corinne.....	do.....										1.15										.25									.05	1.45	
Deseret.....	Sevier Lake.....			T.	.08																									.11	0.65	
Elberta.....	G. S. Lake.....				.31	.07						.26									.30										.14	0.75
Erekson.....	Desert.....											.10									.13											
Enterprise.....	G. S. Lake.....																															
Fairfield.....	do.....																															
Farmington.....	do.....			.30	.66		.20				T.	T.																		.20	1.30	
Fillmore.....	Sevier Lake.....				.02	.11					.63										.37									.27	1.40	
Garland.....	G. S. Lake.....		.15	.35	.15	.20	.32				.52									.22										.04	1.95	
Garrison.....	Desert.....											.27									.10											
Government Creek.....	do.....	.15										.21									.24									.26	0.85	
Granger.....	do.....				.50	T.	T.				T.										.50										1.00	
Grantsville.....	G. S. Lake.....											.27									T.									T.	0.80	
Grouse Creek.....	Desert.....			T.	.08		.45														T.											
Heber.....	G. S. Lake.....			.10	.15		.05	.05			.10	.35									T.									.25	1.00	
Henefer.....	do.....			.09	.08		.20	.15			.09	.25									T.									.14	1.00	
Hooper.....	do.....	T.			.10																									.20	0.30	
Ibapah (near).....	Desert.....																															
Ibex.....	do.....																															
International.....	G. S. Lake.....																															
Iosepa.....	Desert.....			T.	.30		T.																							.20	0.80	
Joy.....	do.....																				.30											
Junction.....	Sevier Lake.....											.18									T.									.27	0.45	
Kanosh.....	do.....					.32					.46											.70								.35	1.83	
Kelton.....	G. S. Lake.....				T.		T.	.40				.17																			0.57	
Lemay.....	Desert.....											.30																			0.30	
Levan.....	Sevier Lake.....			.10	.12	.17						.75										.18								.12	1.44	
Logan.....	G. S. Lake.....		.03	.52		.37	.25				.64					.01					.32								.26		2.40	
Low.....	do.....																															
Lucin.....	Desert.....																															
Lund.....	do.....																															
Manti.....	Sevier Lake.....			.03	.05	.14					.26										.15									.31	0.94	
Maple Creek.....	G. S. Lake.....			.17	.19					T.	.81										.12									.37	1.66	
Marion.....	do.....			.23	.18		.03	.09			.05	.28				.03					.05									.33	1.27	
Marysville.....	Sevier Lake.....										T.	.18																		.30	0.48	
Meadowville.....	G. S. Lake.....			T.	.20		.05					.40				T.					T.									T.	0.85	
Midlake.....	do.....			T.			T.	T.			T.										T.									T.		
Midvale.....	do.....	.10		.23	.13						.31										.29								.07	.15	1.28	
Millford.....	Sevier Lake.....																															
Millville.....	G. S. Lake.....			.48	.37		.46	.20			.37	.44				T.					.38								.15	2.85		
Mills.....	Sevier Lake.....					.02					.29										.22										0.53	
Minersville.....	do.....			.05		.03						.12									.10								.08		0.38	
Modena.....	Desert.....																															
Morgan.....	G. S. Lake.....			.20		.56				.04		.20									.10									.24	1.34	
Moroni.....	Sevier Lake.....			.11	.07	.04					.07	.46									.03									.20	0.98	
Mosida.....	G. S. Lake.....																															
Mount Nebo.....	do.....																															
Nephi (near).....	do.....																															
Newcastle.....	Desert.....										.37										.15											
Oak City.....	Sevier Lake.....																														0.52	
Ogden.....	G. S. Lake.....			.25		.14				.26		.02									.04								.20		0.91	
Panguitch.....	Desert.....										.10																		.12		0.22	
Park City.....	G. S. Lake.....			.03	.05																								.09		0.17	
Park Valley.....	Desert.....						.06				.10	.08																			0.24	
Parowan.....	do.....			.41	.11																										1.12	
Payson.....	G. S. Lake.....			.23	.25						T.	.60			.10						.50								.34		1.42	
Pelican Point.....	do.....																															
Pine Cliff Ranch.....	do.....																															
Pinto.....	Desert.....																															
Plentiful.....	G. S. Lake.....		.22							.11		.52									.20								.01		0.73	
Promontory.....	do.....																												.18		0.51	
Provo.....	do.....			.15	.15						T.																		.40		0.40	
Randolph.....	do.....																												.88		1.18	
Revier.....	do.....			.08	.24		.07				.11						</															

TABLE 2.—Daily precipitation for November, 1912. District No. 10, Great Basin—Continued.

Stations.	Watershed.	Day of month.																														Total.		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
Oregon.																																		
Adel	SE. drainage.																																	
Ana River	do.		T.	T.		.06	.12			.05			T.		.20					.05											T.	0.48		
Bear Valley	do.		.08				.10					.30			.12						.25											1.85		
Burns	do.	.05	.07	.18	.03	.85	.04	.03		.46		T.		.10	.09	T.				.21										T.		1.66		
Burns Mill	do.																																	
Christmas Lake	do.		T.	T.		T.	.23	T.	T.	T.					.15					.03	T.											0.41		
Clio	do.			.15		.15	.21			.09					.30					.06												0.96		
Diamond	do.																																	
Embody	do.			.09	.01	.50	.92	.06		.02	.04	.12	.21	0.2	T.	T.			.03	.01	T.								.07			2.10		
Fort Rock	do.					.38	.02			.08				T.	T.					.06										T.		0.64		
Faisley	do.																																	
Seneca	do.		.06	.09		.10	.16					T.	T.		.10					.03	.07											0.61		
Silver Lake	do.			.50											.09			.07														0.88		
Valley Falls	do.				1.03	.58		T.	T.									.23						1.10								2.94		
California.																																		
Bijou	Truckee		T.	.06		T.	.72			.16	.47									.51												1.92		
Boca	do.						.30			.08	.14	.40								.40												0.78		
Bridgeport	East Walker																				.15											0.69		
Cathedral Park	Truckee																																	
Deer Park	do.	.40	.60	*	*	*	2.00	*	*	1.00										.75												4.75		
Hobart Mills	do.	.05	.02	.01	.02	1.30	.04		12	.27				*	.02					.39	.16											2.40		
Lundy	East Walker		T.	*	*	.05				.77											.28											1.10		
McKinney	Truckee									.74																						4.53		
Markleville	East Carson	T.	T.		.20	*	3.00			1.40				.01					10		.58											2.12		
Shields Ranch	East Walker	T.	T.		.06		.35			.53											.07											0.71		
Silver Creek	East Carson	T.	T.	T.		.950	1.00			.53									.20													2.08		
Tahoe	Truckee		T.	T.		.10	.950	1.00		.53										.54												3.11		
Tallac	do.	T.	T.				.95	.50		T.	.60									.20	.15											2.40		
Truckee	do.						.40			.20										.60												1.20		
Woodfords	West Carson	T.	.04				.14			.81										.64	.26											1.89		
Nevada.																																		
Arthur	Humboldt			.10		.30	.70			.30									T.											.20		1.60		
Austin	Reese		.05	.05						.20										.10												0.40		
Battle Mountain	Humboldt									.04																						0.06		
Bearwae	do.					.10				.21											T.											0.31		
Carlin	do.	.20				.35	.05	T.		.13	.10									.10												T.	0.93	
Carson Dam	Carson																															0.00		
Cherry Creek	Humboldt				.24					.08																						.08	0.40	
Clover Valley	do.		.06	.11	1.16	.16				.17																						.08	1.74	
Columbia	Desert				.04					.38											.18												0.42	
Dry Farm	Humboldt				.13	.46				.25																							1.02	
Elko	do.		T.	.06	.01	.01	.65	.03		.06	.02									T.	.04											.01	0.89	
Eureka	do.				.50					.35																							0.87	
Fallon	Carson			.02	.03	T.				.03											.02											T.	0.08	
Fernley	Truckee																																0.00	
Gardnerville	Carson						.02			.04																							0.13	
Gerlach	Desert					.18	.25												.07														0.43	
Geyser	Humboldt																																	
Glenbrook	Truckee						.75	*	1.05										50.														2.30	
Golconda	Humboldt					*	.39																										0.39	
Halleck	do.																																0.13	
Hawthorne	Desert				.04					.09		T.																					T.	0.00
Jean	do.																																0.00	
Lahontan	Carson			T.		T.	T.			.01																							0.01	
Lewers Ranch	Truckee					.30	2.10			.50										.20													3.10	
Lida	Desert									.35																							0.35	
Lovelocks	Humboldt																																	
McDermitt	do.																																	
McGill	do.				.05					.05	.39																						.08	0.57
Metropolis	do.	T.	.04	T.		.25	.50			T.										.02													0.81	
Mill City	do.					.25	.40			T.										T.													0.65	
Milllett	Reese				.20					T.										T.													0.20	
Mina	Desert																																	
North Fork	Humboldt			T.		*	1.50	.05		.20																				*	1.20	2.95		
Oasis Ranch	Desert																																0.00	
Potts	Reese				.12					.10																							0.22	
Quinn River Ranch	Humboldt					.15	.55														T.												0.70	
Rebel Creek	do.					.15	.70			.03				T.					.03														0.91	
Reno	Truckee						.01		T.	.01										.08													0.10	
Skelton	Humboldt				.40		.56			*		.40								*	.20												1.54	
Smith	West Walker								.08																								0.08	
Soda Lake	Carson																																	
Spooners Ranch	Truckee				.10	.30	.05																										0.65	
Sweetwater	East Walker					T.				T.			.20																				T.	
Tecoma	Humboldt		.05			*	.30			.12										.07													0.54	
Tonopah	Desert									.10										T.													0.10	
Wells	Humboldt							.36														.07											0.43	
Willow Point	Little Hum- boldt.					*	1.10																										1.10	

\* Precipitation included in that of the next measurement.  
 ‡ Separate dates of falls not recorded.  
 ¶ Precipitation for the 24 hours ending on the morning when it is measured.  
 † Precipitation is less than 0.01 inch rain or melted snow.

TABLE 3.—Maximum and minimum temperatures for November, 1912. District No. 10, Great Basin.

Date.	Wyoming.				Weston, Idaho.		Utah.																			
	Border.		Evanston.				Black Rock.		Corinne.		Government Creek.		Marysvale.		Meadow- ville.		Modena.		Ogden.		Parowan.		Provo.		Salt Lake City.	
	Max	Min.	Max.	Min.			Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1.....	44	13	42	8	48	18	60	20	45	25	44	16	69	15	30	4	44	19	50	25	45	22	46	20	50	30
2.....	40	15	42	16	51	22	56	22	50	27	40	28	50	27	40	19	49	29	54	35	53	29	54	24	53	37
3.....	40	29	38	26	45	35	54	30	48	27	51	35	44	32	42	30	49	30	42	25	48	32	44	33	51	38
4.....	36	27	34	24	41	32	48	30	45	25	46	32	43	24	40	28	42	29	48	30	43	28	42	30	44	33
5.....	36	14	37	11	46	24	50	30	46	27	48	34	56	22	42	20	47	24	51	39	47	31	47	27	46	31
6.....	45	13	40	24	42	35	56	27	48	38	50	35	64	20	44	19	52	27	61	38	57	26	45	25	51	37
7.....	46	28	48	28	52	35	63	29	55	36	56	36	63	25	52	32	61	28	64	42	57	30	63	30	63	45
8.....	55	31	55	27	59	39	67	28	57	39	59	37	68	28	52	34	64	31	67	50	62	34	67	29	62	41
9.....	60	24	59	25	63	33	68	28	58	30	64	43	69	28	63	34	63	31	57	35	67	34	72	32	70	51
10.....	55	36	52	36	55	42	62	36	60	30	59	42	55	25	55	34	57	33	47	24	68	39	58	40	61	41
11.....	40	32	40	28	48	30	47	33	66	34	52	31	44	30	42	30	47	30	47	24	60	20	55	35	46	35
12.....	44	18	42	16	48	23	50	20	50	25	48	24	49	17	46	25	48	23	52	26	53	23	50	21	52	32
13.....	49	17	52	19	55	23	56	20	48	25	51	34	59	17	44	22	54	20	58	28	60	25	56	23	53	34
14.....	45	16	51	20	53	25	55	20	51	25	51	29	55	23	50	23	55	23	53	29	59	20	58	23	52	37
15.....	42	20	41	22	43	26	58	22	55	28	47	28	56	24	48	23	55	24	53	28	54	29	51	26	49	36
16.....	48	15	42	20	52	23	50	23	50	25	45	22	49	28	45	25	51	29	55	25	59	26	53	23	50	35
17.....	40	13	49	18	49	21	58	20	48	23	51	26	55	15	44	20	52	21	56	27	55	25	55	20	52	35
18.....	41	12	46	19	51	23	59	18	51	25	54	16	55	16	42	20	58	23	55	28	55	25	55	20	51	34
19.....	46	13	50	17	51	22	60	19	49	22	54	31	60	16	46	20	54	24	57	33	61	25	61	22	60	37
20.....	40	25	44	23	47	32	51	29	50	24	50	30	42	29	37	27	44	30	47	21	44	23	52	32	44	31
21.....	36	9	42	10	42	18	47	15	48	23	40	15	43	18	37	20	45	21	47	23	55	22	46	19	45	29
22.....	44	11	46	14	51	20	50	14	46	25	50	22	54	13	47	21	54	16	51	26	60	35	50	19	50	30
23.....	45	9	50	15	45	18	56	13	45	22	49	25	56	12	42	22	56	17	52	32	52	20	50	19	50	30
24.....	43	13	51	15	48	18	51	20	40	26	44	21	53	20	41	22	49	22	48	21	53	23	48	22	46	32
25.....	45	9	43	16	42	17	50	14	43	22	45	22	50	12	40	21	51	17	48	19	53	23	49	18	47	30
26.....	39	8	41	14	48	18	50	13	46	27	42	21	53	11	39	19	51	18	46	20	54	19	46	16	44	29
27.....	37	3	46	20	41	15	52	13	45	25	48	18	51	12	35	12	52	17	49	23	60	22	48	16	47	26
28.....	43	8	48	19	42	20	57	16	47	28	52	16	56	15	47	20	60	22	45	21	57	23	53	19	45	30
29.....	43	5	47	11	50	16	58	12	40	25	53	23	58	11	47	15	58	18	52	29	54	23	55	18	56	30
30.....	32	12	39	17	40	23	46	32	44	17	48	28	45	27	36	20	51	26	39	16	54	18	40	25	48	32
Mns.....	43.3	16.6	45.2	19.3	48.3	24.9	54.8	22.2	49.1	27.0	49.7	27.4	54.1	20.4	43.8	22.7	52.4	24.1	51.6	27.8	55.4	26.2	52.3	24.2	51.3	34.3

Date.	Oregon.				Nevada.																							
	Burns.		Austin.		Cherry Creek.		Elko.		Eureka.		Fallon.		Hawthorne.		Jean.		Millett.		Quinn River Ranch.		Reno.		Tecoma.		Tonopah.		Winne-mucca.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1.....	50	27	41	20	40	15	48	13	44	20	57	24	58	32	75	36	54	11	47	15	56	29	62	12	46	32	54	28
2.....	43	21	40	22	47	32	47	30	42	29	57	39	56	41	69	34	47	37	53	28	48	34	65	20	44	34	52	34
3.....	38	19	38	23	47	33	50	33	48	27	58	29	63	30	68	40	54	27	54	34	52	32	68	22	50	34	51	35
4.....	46	25	39	24	40	31	46	31	42	23	54	33	54	38	72	40	48	32	49	14	51	33	66	21	48	35	49	29
5.....	42	30	41	29	44	23	46	15	48	18	54	23	58	26	70	38	51	16	40	27	54	32	69	20	50	34	45	28
6.....	54	29	48	28	51	38	50	36	57	34	63	38	61	34	71	37	63	37	52	36	55	47	62	20	52	35	52	37
7.....	46	35	50	29	56	35	54	45	57	30	64	35	66	34	69	32	55	26	52	36	61	40	62	22	53	40	56	37
8.....	55	39	55	36	60	31	61	32	59	35	70	36	70	37	65	32	65	25	63	38	65	40	67	21	58	42	66	37
9.....	59	32	58	34	61	40	62	42	60	40	72	45	72	38	63	34	67	35	66	28	63	40	67	18	62	43	66	39
10.....	48	21	46	30	54	31	60	34	55	28	62	40	60	37	68	37	58	31	52	35	44	35	65	22	51	29	46	28
11.....	46	26	47	30	37	19	43	24	42	20	54	23	54	30	70	36	47	23	49	20	55	25	67	11	41	28	49	23
12.....	60	28	46	32	44	18	50	20	49	18	56	20	60	27	71	35	53	12	57	23	60	24	66	9	50	34	55	26
13.....	50	33	49	33	51	21	53	19	52	23	54	21	60	39	71	35	50	10	51	24	55	26	65	8	53	35	53	26
14.....	50	26	40	34	53	32	55	26	53	32	62	26	60	29	68	38	58	20	56	28	59	34	65	11	50	39	56	31
15.....	44	23	42	30	50	27	52	22	57	25	57	24	60	27	69	29	58	14	57	19	59	26	67	11	50	36	55	28
16.....	46	26	43	28	46	25	51	18	51	20	55	19	63	31	70	28	51	17	54	17	58	26	65	10	49	35	54	29
17.....	48	28	41	29	53	21	56	18	52	27	60	18	60	30	62	20	58	9	53	16	59	27	66	10	52	38	58	23
18.....	55	29	49	23	52	26	58	22	53	30	63	20	67	30	62	35	59	15	58	22	64	29	64	8	54	40	62	25
19.....	46	19	50	20	53	30	58	21	52	32	64	24	62	31	68	32	56	19	56	17	53	33	63	9	51	35	59	20
20.....	44	12	54	30	44	29	49	28	44	20	48	25	57	33	70	30	46	38	49	28	48	26	64	15	41	29	46	21
21.....	47	24	57	31	46	16	48	12	50	14	50	13	55	22	64	28	50	8	47	10	54	21	63	5	48	23	48	17
22.....	49	19	59	32	55	22	52	16	59	23	56	15	56	23	64	26	54	7	52	13	57	21	63	4	54	40	55	19
23.....	53	15	62	38	51	21	45	14	58	25	53	15	57	25	63	25	56	6	48	12	58	21	60	3	54	39	52	21
24.....	53	18	64	37	49	21	50	13	52	23	51	15	56	26	60	23	58	10	52	9	57	20	60	4	48	31	53	15
25.....	52	20	60	39	50	23	51	12	55	22	52	14	53	23	62	24	53	9	52	10	56	20	65	5	50	36	54	16
26.....	52	18	58	40	48	21	54	11	53	23	52	16	52	24	64	28	58	7	56	10	58	21	64	5	49	36	54	16
27.....	53	18	59	40	55	18	51	11	56	24	52	15	54	20	67	28	57	11	52	12	57	22	65	10	54	38	58	18
28.....	52	16	62	38	56	33	52	17	55	27	52	17	53	27	66	27	58	7	58	18	62	23	63	5	52	40	57	20
29.....	42	24	60	39	55	21	53	10	56	25	59	15	55	34	67	28	51	20	53	10	61	26	64	10	52	35	58	17
30.....	42	14	59	39	47	29	41	26	46	25	53	30	62	25	70	23	48	10	48	26	46	21	65	11	38	26	43	16
Mns..	48.8	23.8	50.6	31.2	49.8	26.1	51.5	22.4	51.9	25.4	57.1	24.2	59.1	29.8	67.3	31.3	53.9	18.3	52.9	21.2	56.2	28.5	64.6	12.1	50.0	35.0	53.9	25.3